

hyæna, a distinct form, but one nearly related to the striped, also ranges, as a very scarce animal, from Natal in the south to equatorial East Africa in the north, and may possibly be found here and there within the limits of the British Central Africa Protectorate. The black and white monkey to which the author refers is obviously the Colobus, and not the Mangabey, which ape is nowhere found within the limits of British Central Africa, but is a form confined to the West African fauna, though it reaches as far as the western limits of the Uganda Protectorate.

The author gives a charming and accurate description of one of the Galago lemurs which are so common in this part of Africa. The writer of this review is convinced that the intelligence—the almost Simian intelligence—of most of the lemurs has been greatly underrated, as also their human characteristics, such as their ability (specially marked in the Galagos) of running on the hind feet and using the hands to box with. A Galago surprised and at bay puts his large fists almost into the positions of a human boxer. Of this interesting animal the author writes:—

"This lemur is a charming little thing to look at, with its soft bluish-grey fur, and large, solemn, perfectly circular eyes. It also makes a most engaging pet. I knew one which used to live half wild in the roof of a verandah at Zomba, coming and going without let or hindrance. In disposition he was on the whole very sociable, but inclined at the same time to be somewhat overburdened with a sense of his own dignity. At any rate, it was very easy to offend him; and when this happened he would retire to his coign of vantage in the roof, which nothing would then induce him to quit. At other times he would come out readily when called by his native name of "Changa." Five-o'clock tea was his favourite meal, and he rarely missed it, being accustomed about that time to refresh himself with a saucer of milk, which he drank with elaborate daintiness. His curiosity was infinite, and sometimes overcame his natural good breeding; but lapses of this kind often brought their punishment, as once, when he thrust his head unbidden into a small coffee cup and could not withdraw it. The sight of him thus unexpectedly bonneted I remember to this day. Though a certain sedateness marked his normal bearing, he possessed a truly wonderful reserve fund of activity, and could climb anything and jump anywhere when the humour took him. Moreover, he had a knack of alighting after the most prodigious leap almost as gently as a bird. I have known him to drop suddenly from a high curtain pole on to the edge of a tea tray without upsetting a single cup; but then of course he was a very small animal—smaller in fact than he looked, owing to his thick, fluffy coat."

There are interesting notes on pp. 85, 86, on the fish of Lake Nyasa, in which justice is done to the wonderful colours of the "blue perch."

On p. 124 an excellent description is given of the weird noises in the African bush at night time. The author also is wise enough to illustrate the monotony and stillness of the African landscape in day time and under normal conditions. He discourses on the singular beauties of the flora and the marvellous interest in the fauna, but brings home to his readers that every aspect in all seasons and under all conditions of Central Africa is not wonderful or beautiful or terrifying. Rather, perhaps, have many of these beauties and wonders to be sought for; they are not immediately patent to the eye of the untrained observer.

He still considers that as a game country Nyasaland may almost vie with any other part of tropical Africa where game is varied and abundant, and attributes the fact that no species in the splendid fauna

is yet on the verge of extinction to the Game Laws, which have been in existence now for something like eight years, and which the Foreign Office has steadily enforced.

His chapters on the native races are admirable. He has evidently made himself well acquainted with the Chinyanja tongue, and through the medium of this widespread language has been able to get into touch with the natives of the Protectorate, thus collecting much new and valuable information regarding the manners, customs, traditions, beliefs, &c. To their amiable qualities he is fully alive, as also to their weaknesses and simple vices.

The remarks of the author regarding the labour question are well worthy of attention, but are not suited for discussion in the pages of this Journal. The same remark applies to his excellent chapter on the work of the missionaries, which is critical but appreciative.

#### THE CANADIAN ROCKY MOUNTAINS.<sup>1</sup>

THIS attractive volume is more than a record of mountain climbing. It gives the reader a very good idea of a considerable area of the Great Lone Land, its fine scenery and physical characteristics, introducing him to not a few "untrodden peaks and unfrequented valleys." Between the eastern base of the Canadian Rocky Mountains and the Pacific shore the earth's crust has been crumpled into a zone of parallel folds more than 500 miles in breadth, which have been deeply sculptured by meteoric agencies. South of the American border these mountains are distinguishable into the Rockies proper and the Sierra Nevada, parted one from another by the broad plateau of Utah, the latter chain being flanked on the west by the Coast Range. In Canada the three are practically fused together, the peaks running in successive ranges, almost like waves of the sea. Messrs. Stutfield and Collie selected as their field of work the region on both sides and immediately west of the continental watershed to the north of Hector Pass—that traversed by the Canadian Pacific Railway. This region, so far as they saw, consists entirely of sedimentary rocks—limestone, sometimes dolomitic, with shales or slates. It is, as mountaineers will see from the illustration which we reproduce, not unlike the Western Oberland, between the Blumlis Alp and the Diablerets, greatly enlarged laterally but not vertically, the higher peaks ranging commonly from about 10,500 to rather under 12,000 feet. The mountains, in fact, were less lofty than the authors had anticipated. One of their few predecessors had, indeed, reported the existence, some dozen leagues north of the railway, of two Alpine giants, Mount Brown and Mount Hooker, rising on either side of a pass, the one to an elevation of 16,000 feet, the other only 300 feet lower, and asserted that he had scaled the former. As, however, this indicated an ascent of about 9000 feet in little more than half an early summer's day, experts were sceptical; the more so when Prof. Coleman, of Toronto, ten years ago found a mountain only just more than 9000 feet high where Mount Brown should be. These giants, in the course of the explorers' four journeys, were proved to be as great impostors as the Mont Iseran and Aiguille de la Vanoise of the Graian Alps some half-century ago.

Travel in the Canadian Rockies is anything but easy work. Wood and water are the only necessities which the country can be trusted to supply. Indians are few, and game is generally scarce, so that a loss

<sup>1</sup> "Climbs and Explorations in the Canadian Rockies." By Hugh E. M. Stutfield and J. Norman Collie, F.R.S. Pp. xii+343; with maps and illustrations. (London: Longmans, Green and Co., 1903.) Price 12s. 6d. net.

of supplies might occasionally mean something very like starvation. Where there are any roads, these are but trails, often more than half overgrown, so that progress is apt to be slow and laborious, difficult swamps and swollen rivers have to be crossed, while mordant insects, mosquitoes and flies, are at times almost intolerable. So notwithstanding the charms of the scenery—bold peaks, fine glaciers, forest-clad slopes, and almost numberless lakelets of rare beauty—travel in the Canadian Rockies is not to be recommended to the habitués of Interlaken or Luchon. Until the Switzerland of Canada is developed—as before long it certainly will be—it can only be explored by hardy and vigorous travellers.

Game, as we have said, is scarce, but the bighorn (*Ovis Canadensis*) and the Rocky Mountain goat (*Haploceros montanus*) occur perhaps about as often as chamois in the Swiss Alps, and bears—black, brown and grizzly—are occasionally seen. Geese, ducks, and three kinds of grouse sometimes vary the menu, but evidently the district will hardly be tempting to sportsmen who desire “big bags.” Neither do the rocks appear attractive to the palæontologist. The specimens brought back by Dr. Collie were rarely fossil-

photographs, which enable us to realise the beautiful scenery of this unfrequented land, and its topography is made clear by a map constructed from the authors' surveys. That is such as we might have expected—long troughs parallel with the general trend of the strata being connected by shorter transverse glens, as can be seen, on a smaller scale, in some parts of the Alps. In consequence of this, the Canadian Pacific Railway, as is well known, descends, west of the watershed, into a valley belonging to the Columbia system, then, after crossing a spur, strikes the same river flowing in an opposite direction, and after another mount descends to follow the Fraser River to the coast. Well illustrated and written in an attractive style, the book records a series of journeys, not always without risk, and throws much light on the geography of a region many parts of which have hitherto been very imperfectly known.

T. G. BONNEY.

#### SCIENCE AND THE ARMY.

MANY of our readers may have seen a brief preliminary official notice of the proposals of the War Office for the reform of military education. These proposals are so astonishing, in view of the facts of the case, that we take an early opportunity of directing attention to them.

There is to be, first, a qualifying test. It is intended that this shall take the form of a “leaving certificate,” but in view of the probable difficulty of organising a suitable leaving examination for a long while, there seems reason to fear that, at first, this qualifying part may take the form of a special examination, which all must pass, but which will not otherwise affect the final result. This qualifying part is to consist of:—(1) English, (2) history and geography, (3) mathematics, (4) French or German, (5) either (a) Latin or Greek, or (b) science.

Then there is to be a competitive examination, in which (1) English, (2) French or German, and (3) mathematics i. will be compulsory for Woolwich candidates; and English and either French or German for Sandhurst candidates. In this examination Woolwich candidates may also offer any two

of mathematics ii., science, history, French, German, Latin, Greek; and Sandhurst candidates may also offer any two of mathematics i. or mathematics ii., science, history, French, German, Greek, Latin.

The more closely we look into the probable effect of these proposals the more clearly does it appear that, under this new scheme, experimental science seems certain, by the light of past experience, to become a negligible quantity in the training of most officers. Those who read the report of the Army Education Committee published in March, 1902, may remember that the head master of Eton during the examination of a witness expressed confidently the opinion that, if Latin and science should be brought into competition in these examinations, “the science will kill the Latin.” Even Dr. Warre, however, does not expect this to happen just yet, for he added, “eventually.” Unfortunately for this position, we do not merely want to get a good system of army education eventually, but to get one as soon as possible,

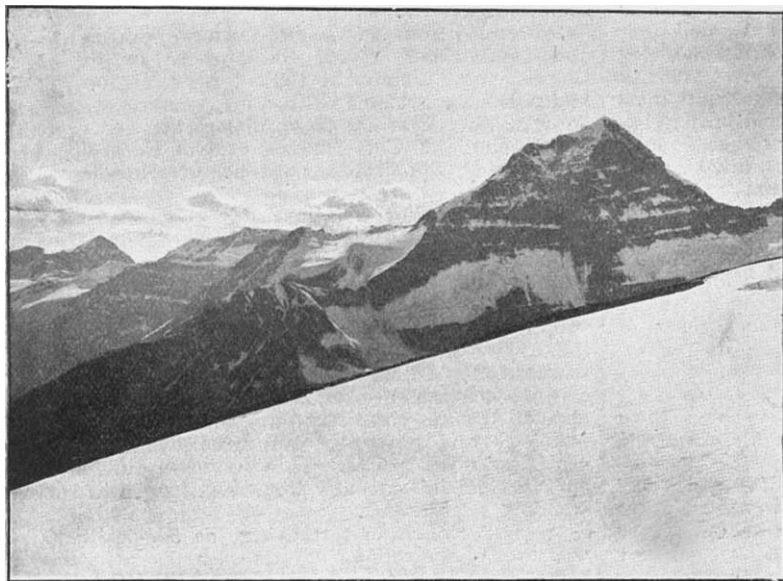


FIG. 1.—Mount Forbes from the East. From “Climbs and Exploration in the Canadian Rockies,” by H. E. M. Stutfield and Prof. J. Norman Collie.

iferous, even when examined under the microscope. Mr. Whympers had, on the whole, a similar experience in his explorations near and to the south of the railway, so that either subsequent mineral changes have obliterated the traces of organisms or the region in past ages was not rich in life. Dr. Collie gives an illustration of objects resembling tree trunks high up on Mount Murchison—possibly the stems of some giant alga—and picked up limestone pebbles with corals, probably Devonian or Carboniferous, in the bed of the Bush River. A few specimens contained traces of organisms, some perhaps foraminifera (misprinted foraminiferae), with an ostracod (misprinted ostreod); one slab showed badly preserved trilobites, probably Lower Cambrian, described by Dr. H. Woodward, and the journey of 1901 was rewarded with some remarkable tracks and other markings from Desolation Valley, south of the railway, not far from Laggan (see the *Geological Magazine* for July last).

The book is well illustrated by numerous reproduced